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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/541,801

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Dan Verser

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EXAMINER

VALENROD, YEVGENY

ART UNIT

PAPER NUMBER

1621

MAIL DATE

DELIVERY MODE

07/31/2008

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/541,801	<b>Applicant(s)</b> VERSER ET AL.	
	<b>Examiner</b> YEVEGENY VALENROD	<b>Art Unit</b> 1621	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 02 May 2008.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                     | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

## DETAILED ACTION

### *Response to Arguments*

Applicant's arguments filed 5/02/08 have been fully considered but they are not persuasive.

In response to applicant's argument that the three references do not teach all of the instantly claimed limitations, the test for obviousness is not whether the features of a secondary reference may be bodily incorporated into the structure of the primary reference; nor is it that the claimed invention must be expressly suggested in any one or all of the references. Rather, the test is what the combined teachings of the references would have suggested to those of ordinary skill in the art. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981).

In the instant case the claimed process comprises the following steps:

A) Reacting cation/organic acid salt with nitric acid to acidify the organic acid and form a salt of the cation and nitrate,

B) recovering organic acid salt from a solution.

C) reacting the cation/nitrate salt with ammonium carbonate to form ammonium nitrate.

These three steps as well as the limitations in the dependant claims are present in the cited references.

Eyal et al. teach: A method for producing organic acids from fermentation broth. Lactic acid is exemplified. Calcium carbonate is added to the fermentation broth to

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produce calcium lactate and the biomass is removed leaving calcium lactate comprising solution (see abstract). Although Eyal et al. proceed with separating the desired acid via a procedure that requires salt-splitting electrodialysis, one skilled in the art would find it obvious to use any other method that has been developed for isolation of organic acids from fermentation broth or solutions.

Ponnampalam teaches a method for purification of organic acids using anion exchange chromatography. The method is described as being effective in removing organic carboxylic acids from variety of sources including fermentation broths (Abstract, last 3 lines). The method involves allowing carboxylic acid anion to bind to an anion exchange column, removing impurities from the carboxylic acid solution and subsequent removal of the acid from the column by addition of a stronger anion to exchange with the acid (column 2, lines 45-54). Adsorption of lactate ion is described in column 7, line 65 - column 8, line 9. In the above example HCl was used to remove the ion organic acid from the column, however, in column 4, Ponnampalam teaches: "It is expected that other strong acids could also be used to release the carboxylate ion as carboxylic acid, including, but not limited to nitric acid..." (column 4, lines 8-11). One skilled in the art would therefore be motivated to chose any of the listed acids for removal of the organic carboxylate from the column, which meets the limitations of the instant step a). Purification of the organic acid is also taught in Pannampalam (column 4, lines 12-20).

Lastly, Zapp et al. teach that ammonium nitrate can be prepared by adding ammonium carbonate to a nitrate salt (section 1.2.2, page 6).

The combination of the three references teaches the instant invention. One skilled in the art would have expectation of success in combining the references because each element of the is to be used as taught in the reference with the expected outcome as described in the references. Unless applicant points unexpected results arising from the process of the instant invention, the rejection of record stands.

In the remarks the applicant has made the following specific arguments:

1) Eyal et al. teach a different method of separating the acid than what is instantly claimed.

Although Eyal et al. proceed with separating the desired acid via a procedure that requires salt-splitting electrodialysis, one skilled in the art would find it obvious to use any other method that has been developed for isolation of organic acids from fermentation broth or solutions. Eyal et al. is used in this rejection to show that producing carboxylic acid via fermentation is known and that calcium carboxylate salt from fermentation broth is known. Further purification steps are based on Ponnampalam et al.

2) On page 11, last paragraph, applicant argues that Ponnampalam does not teach or even suggest reacting a cation organic/acid salt with nitric acid to acidify the organic acid.

Examiner respectfully disagrees with the above statement. Ponnampalam teach carboxylate ion being adsorbed on to the ion exchange resin. It is the contention of the

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Examiner that while on the resin the carboxylic acid is in the form of a salt and when treated with a strong acid (such as nitric acid) the carboxylate is protonated and released from the salt complex, while the nitrate ion assumes its position on the resin. The nitric acid therefore does acidify the organic acid salt.

3) Applicant argues that there is no reason for why one would use nitric acid to elute organic acid from ion-exchange chromatography (page 12, 2<sup>nd</sup> paragraph).

Ponnampalam draws equivalency between the strong acid useful in the process. Nitric acid is included in the list of acceptable acids.

4) Applicant argues that Zapp et al. fail to disclose the elements required for production of ammonium nitrate as listed in the instant claims. Particularly that Zapp et al. is devoid of any teaching or suggestion of reacting cation/organic acid salt with nitric acid.

Its true that Zapp et al do not teach everyelement of the instant invention. However in the instant case Zapp et al. is only used to indicate that formation of ammonium nitrate from ammonium carbonate and cation/nitrate is known. Zapp et al. is not relied upon for the steps leading up to the production of cation/nitrate.

### ***Conclusion***

Claims 1-20 are pending

Claims 1-20 are rejected

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

This action is a **final rejection** and is intended to close the prosecution of this application. Applicant's reply under 37 CFR 1.113 to this action is limited either to an appeal to the Board of Patent Appeals and Interferences or to an amendment complying with the requirements set forth below.

If applicant should desire to appeal any rejection made by the examiner, a Notice of Appeal must be filed within the period for reply identifying the rejected claim or claims appealed. The Notice of Appeal must be accompanied by the required appeal fee of

If applicant should desire to file an amendment, entry of a proposed amendment after final rejection cannot be made as a matter of right unless it merely cancels claims or complies with a formal requirement made earlier. Amendments touching the merits of the application which otherwise might not be proper may be admitted upon a showing

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a good and sufficient reasons why they are necessary and why they were not presented earlier.

A reply under 37 CFR 1.113 to a final rejection must include the appeal from, or cancellation of, each rejected claim. The filing of an amendment after final rejection, whether or not it is entered, does not stop the running of the statutory period for reply to the final rejection unless the examiner holds the claims to be in condition for allowance. Accordingly, if a Notice of Appeal has not been filed properly within the period for reply, or any extension of this period obtained under either 37 CFR 1.136(a) or (b), the application will become abandoned.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Yevgeny Valenrod whose telephone number is 571-272-9049. The examiner can normally be reached on 8:30am-5:00pm M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Daniel Sullivan can be reached on 571-272-0779. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.



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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Yevgeny Valenrod/

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